EPA's Green Power Purchase Program
Progress through Partnership

Nomination Summary

The U.S. Environmental Protection Agency (EPA), in partnership with the National Renewable Energy Laboratory, the General Services Administration, the Defense Energy Support Center, the Federal Energy Management Program, and the Western Area Power Administration, now purchases approximately 122 million kilowatt hours (kWh) of green power per year—or approximately 44 percent of its electric power—the highest percentage of any major federal agency. As a result of these renewable purchases, EPA has reduced its greenhouse gas emissions by 105,193 tons per year, a reduction equivalent to taking approximately 13,500 cars off the road. This effort has helped EPA and its partners develop significant expertise in the areas of green power and its procurement, and increased the federal government's ability to buy and use green power products.

EPA's Green Power Purchase program started with just one laboratory in 1999, but the inaugural purchase catalyzed federal green power procurements, as the experience provided needed guidance for other agencies to make their own green power purchases. By the end of FY 2003, EPA had nine facilities that procure renewable energy for 100 percent of their electrical needs and two facilities that purchase more than 50 percent of their electricity from renewable sources, totaling 111 million kWh per year. The program continues to grow, thanks to EPA's continuing management and financial commitment to green power and the technical advice and procurement assistance from EPA's partners.

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For the last five years, the U.S. Environmental Protection Agency (EPA) has worked in cooperation with the Department of Energy's (DOE) National Renewable Energy Laboratory (NREL), the General Services Administration (GSA), the Department of Defense's Defense Energy Support Center (DESC), DOE's Federal Energy Management Program (FEMP), and the Western Area Power Administration (Western), to acquire green power. As a result of these partnerships, EPA now purchases approximately 122 million kilowatt hours (kWh) of green power per year—or approximately 44 percent of its electrical needs—the highest percentage of any other major federal agency. Because of these renewable purchases, EPA now reduces its greenhouse gas emissions by 105,193 tons per year, the equivalent of taking approximately 13,500 cars off the road. This effort has also helped EPA, NREL, GSA, DESC, FEMP, and Western develop extensive expertise in the area of green power procurement and increased the federal government's ability to buy renewable energy.

The Green Power Purchase program began in July 1999, when EPA's laboratory in Richmond, California, began purchasing 1.9 million kWh per year of green power from landfill gas and geothermal sources from the Sacramento Municipal Utility District (SMUD), making EPA the first federal agency to procure 100 percent green power for one of its facility's electrical needs. At the time of the Richmond purchase, California had just become a deregulated electricity market, and the concept of purchasing green power at federal agencies was relatively new. EPA worked with NREL, GSA, and FEMP to gain understanding of the green power purchasing process and with FEMP and GSA to complete the Richmond procurement. This inaugural purchase catalyzed federal green power procurements, as the Agency's experience with this buy provided guidance for other agencies to make their own green power purchases. To ensure the power for this purchase was truly from renewable sources, at NREL's suggestion, EPA required SMUD to obtain "Green-e" certification, which certifies that renewable electricity products meet environmental and consumer protection standards established by the Green-e Renewable Electricity Certification Program.

It may have started small, but the Richmond contract launched a successful Green Power Purchase program at EPA. The program continues to grow, thanks to EPA's continuing management and financial commitment to green power and the technical advice and procurement assistance from EPA's partner organizations. By the end of FY 2003, EPA had nine facilities that procure renewable energy for 100 percent of their electrical needs and two facilities that purchase more than 50 percent of their electricity from renewable sources, under contracts totaling 111 million kWh per year. As of March 1, 2004, EPA has 13 facilities procuring 50 to 100 percent of their electricity from green sources and is now purchasing 122 million kWh of green power, or approximately 44 percent of its electricity, annually. EPA, through its partners, hopes to continually exceed its goal of adding at least one facility per year to its green power roster.

BUILDING PARTNERSHIPS AND INCREASING GOVERNMENT EXPERTISE

As EPA's green power commitment and program grew, more partners contributed their advice, insights, support, and expertise, allowing green power procurement experience to disseminate to an increasing number of agencies. NREL has been a valuable partner to EPA by providing technical support for most of the Agency's green power acquisitions. DESC and GSA's National Energy Center and its New York and Fort Worth, Texas, regional offices provided procurement services and advice for EPA's delivered green power and green tags, and continue to provide acquisition support. Western, the Agency's newest partner, is currently working on green tag procurements for four EPA facilities in FY 2004. FEMP has continued to support EPA's procurement efforts and share its procurement knowledge with other agencies.

With each green power purchase, EPA and its partners gain experience that allows them to more successfully contract for their own green power products. For example, DESC's first green tag procurement was in connection with an EPA procurement in North Carolina. GSA's assistance produced

another first, allowing EPA to obtain 100 percent wind power at a regional office, EPA's first office-related procurement.

GREEN POWER PURCHASES FOR FY 2003

At the end of FY 2003, EPA was purchasing green power and green tags at the rate of 111 million kWh per year, representing 40 percent of the Agency's electricity use. By October 1, 2003, EPA had significant contracts in place to receive green power or green tags in 10 facilities.

- *Research Triangle Park (RTP), North Carolina*: On September 30, 2003, EPA agreed to buy more than 35 million kWh worth of renewable energy annually, or 50 percent of the Agency's National Computer Center and new Main building electrical needs. Contracted through DESC, this procurement will serve as a template for future DESC green tag purchases. EPA secured nearly 30 million kWh worth of green tags that will support the generation of renewable energy from a wind farm in Iowa and a landfill gas facility in Florida. In addition, EPA committed to purchase approximately 6 million kWh of green power generated from sources located in North Carolina in FY 2004 through an agreement with NC Green Power. NC Green Power is the first statewide green power program to be approved by a Public Utilities Commission. EPA is a founding partner of the program.

- *Federal Triangle Headquarters Facility, Washington, DC*: EPA Headquarters committed to purchase green power at a rate of 39 million kWh per year. Deliveries started September 1, 2003. Pepco Energy Services is the current provider. The green power is a blend of 25 percent wind power and 75 percent landfill gas, generated at mid-Atlantic facilities. GSA's National Energy Center procured this green power for EPA, which represents 100 percent of EPA's Federal Triangle Headquarters electricity use and is EPA's largest green power purchase to date.

- *Region 2 Laboratory, Edison, New Jersey*: In September 2003, with assistance from GSA's National Energy Center, EPA completed a green power purchase for 4.5 million kWh per year of electricity from biomass and landfill gas at its Edison, New Jersey, laboratory.

- *Houston Environmental Laboratory, Houston, Texas*: GSA's Fort Worth, Texas, Regional office signed a contract for EPA for 3.3 million kWh worth of green tags equal to 100 percent of its electricity use at the Houston Environmental Laboratory. As of July 2003, the tags come from 100 percent wind energy from the 204-Megawatt New Mexico Wind Energy Center near Clovis, New Mexico.

- *Region 2 Office, New York, New York*: In June 2003, EPA's Region 2 Office in New York City became the Agency's first regional office to purchase 100 percent green power for its electrical needs. Working with GSA's National Energy Center and GSA's New York Regional Office, EPA procured approximately 6.1 million kWh of electricity annually from the Fenner Wind Power Project, making it the largest federal purchase of wind energy in New York State.

- *Chelmsford, Massachusetts*: EPA meets the facility's 2.8 million kWh annual electricity needs with 100 percent wind power from Green Mountain Utility's Searsburg wind farm in Vermont and wind power sources in New York. EPA worked with GSA to complete this procurement, which has been in effect since the building opened in October 2001.

- *Cincinnati, Ohio*: Since October 2001, EPA has received 100 percent green power at its three main facilities in Cincinnati, Ohio. EPA, GSA's National Energy Center, and NREL contracted with Community Energy, Inc., to supply the Agency with more than 15 million kWh per year of renewable energy generated at a wind farm in Pennsylvania and landfill gas facility in Illinois.

- *Manchester, Washington*: EPA's Region 10 office has helped the Agency procure 100 percent wind power from the Bonneville Environmental Foundation (BEF) since August 2000. BEF purchases a minimum of 2.7 million kWh annually worth of green tags that help support the generation of wind power from wind turbines in the Western Region. This is believed to be one of the first large retail sales of green tags in the country.

- *Golden, Colorado*: Since June 2000, the Golden laboratory has purchased 100 percent wind power, or 1.9 million kWh per year, which EPA's Region 8 office helped to secure through Xcel WindSource's green pricing program.

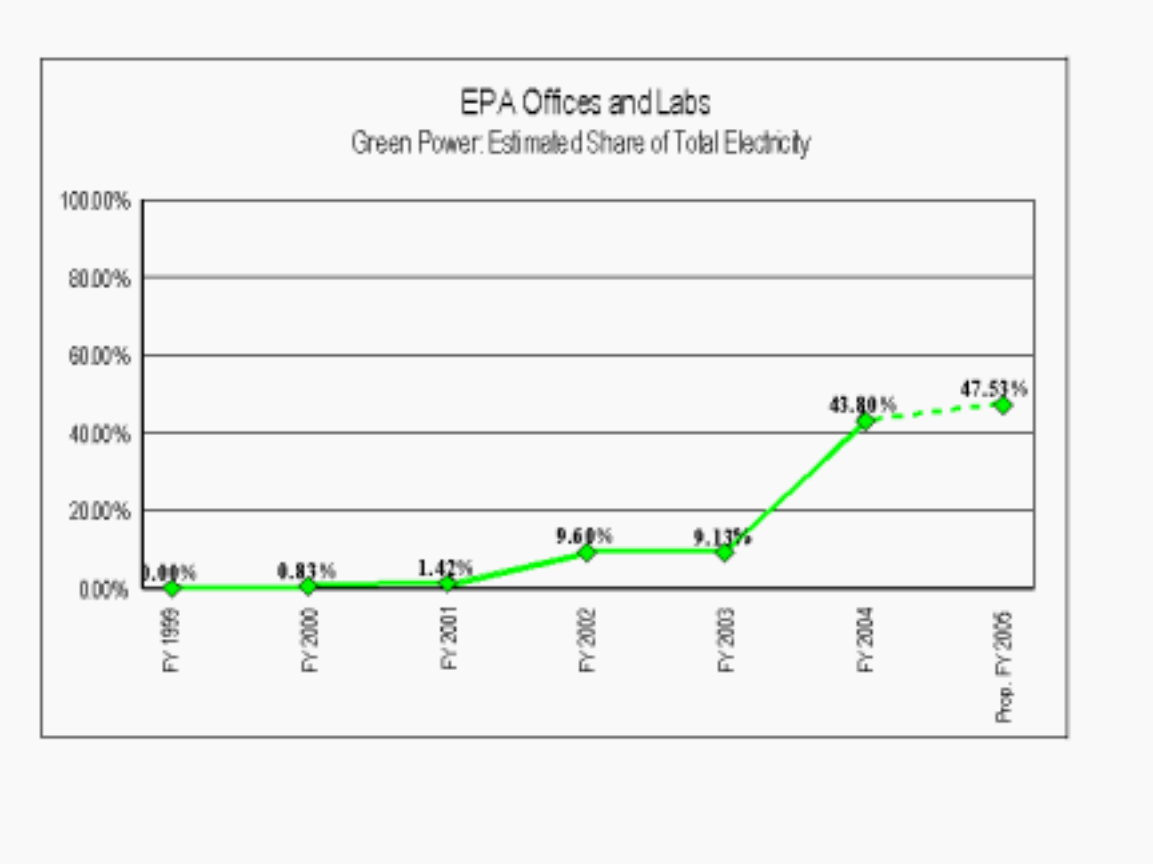
- *Richmond, California*: During FY 2003, EPA extended its 100 percent green power purchase contract with SMUD through FY 2005. SMUD will supply the Richmond laboratory with 1.8 million kWh of landfill gas generated electricity each year. EPA worked with FEMP, GSA's National Energy Center, and NREL to procure green power for this facility in 1999.

EPA plans to continue its successful push for green power purchases in FY 2004, and the Agency is already on track to do so with two new purchases in Athens and Atlanta, Georgia. The Agency is working with Western to procure green power at four new locations in FY 2004. Working with the DESC, EPA expects to complete procurements at three additional locations in FY 2004.

Results

Based on current contracts and planned acquisitions, EPA expects to receive 47.55 percent of its electricity from green power by FY 2005. (See Figure 1.)

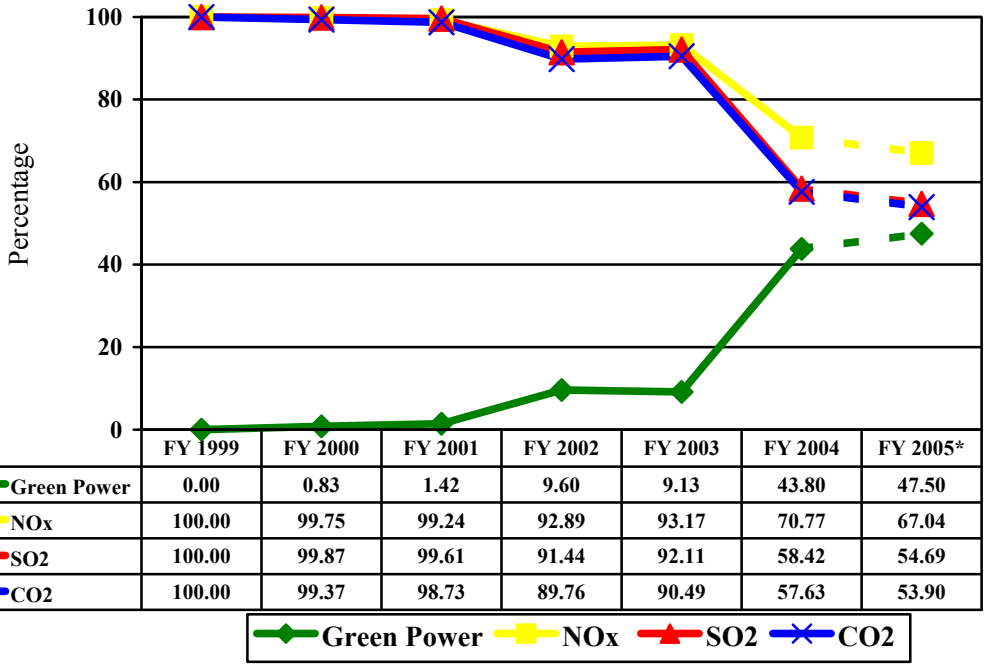
Figure 1



In addition to offsetting the need for conventional energy sources, the Agency is also helping to reduce emissions of greenhouse gases such as nitrogen oxides (NO_x), sulfur dioxide (SO_2), and carbon dioxide (CO_2). Based on the Agency's contracted green power purchases at the close of 2003, totaling 111 million kWh, EPA will reduce its greenhouse gas emissions by 97,217 tons per year based on a FY 1999 baseline[1]. The CO_2 reduction is equivalent to removing approximately 12,500 cars from the road. EPA will continue reducing its greenhouse gas emissions as the percentage of electricity at EPA offices and laboratories coming from renewable sources increases. (See Figure 2.)

[1] Calculation based on factor of 1 metric ton = 2,204.6 pounds as on DOE's Energy Information Agency Web site: www.eia.doe.gov/oiaf/1605/gg99rpt/appendixf.html.

Figure 2: Green Power vs. Emissions: Estimated Share of Total Electricity and Changes in Electricity-Related Emissions
Based on FY 1999 baseline figures



	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005*
Green Power	0.00	0.83	1.42	9.60	9.13	43.80	47.50
NOx	100.00	99.75	99.24	92.89	93.17	70.77	67.04
SO2	100.00	99.87	99.61	91.44	92.11	58.42	54.69
CO2	100.00	99.37	98.73	89.76	90.49	57.63	53.90

* Proposed Green Power Purchases for FY 2005

The DOE implementation guidelines for Executive Order 13123 ask the federal government to have the equivalent of 2.5 percent of facilities' electricity consumption come from new renewable energy sources by 2005. EPA is also required under Executive Order 13123 to cut energy use in its labs by 20 percent from an FY 1990 baseline by FY 2005. EPA reports annually to DOE and the Office of Management and Budget on its laboratories' progress to meet these energy reduction goals (the Agency only reports on laboratories, where it pays the utilities directly). DOE's implementing regulations allow agencies to deduct green power from their energy use figures. By deducting EPA's office and lab green power purchases from its reportable energy use, EPA's total reported energy consumption would be reduced by 25 percent. This represents a significant reduction in the environmental impact of EPA's energy use.

On top of reducing energy-related emissions, EPA's Green Power Purchase program has also helped develop green power markets. As EPA and its partners have learned about and helped to improve the green power purchase process, EPA has seen pricing improve significantly. There has always been a slight premium for green power products, however, EPA has seen its price premiums fall from 1–2.5 cents per kWh when the program got underway in 1999 and 2000, to 0.2–1.1 cents per kWh during the last year. These changes reflect growth in the markets and more innovative efforts by EPA and its partners to obtain green power products.

GREEN POWER MESSAGE REACHES BEYOND THE AGENCY

As the federal environmental agency, EPA has the responsibility to lead by example and promote green power to other agencies. EPA works to meet this responsibility by continually promoting green power through a number of outreach methods. EPA's Office of Administrative Services Web site, which is updated quarterly, details the green power and green tag purchases made at each facility. Additionally, EPA has an online, animated green power presentation that provides an overview of EPA's purchasing efforts. To educate employees on the green power purchases at EPA, a number of articles have been featured in the *Energizing EPA* newsletter, which is produced quarterly by the Office of Administration and Resources Management and is distributed to all Agency employees. During FY 2003, the Agency initiated an outreach effort that involved creating window "clings," which are adhered to windows and doors in heavily used entrance ways into the Federal Triangle Headquarters facilities to announce to those entering the buildings that the facility operates on green power. EPA is ordering additional clings for all existing green power locations. (See Appendix 1.)

TOWARD BETTER ENERGY PERFORMANCE

EPA's green power purchasing endeavors are part of a larger effort to improve the Agency's overall energy performance. EPA is continuing to maximize the energy and water efficiency and environmental performance of its facilities, focusing on the largest energy consumers first. A number of efficiency improvements, described below, are either recently completed or are underway.

- *Energy Master Planning*: In FY 2003, EPA incorporated energy master planning as part of the architectural master planning process for the A.W. Breidenbach Environmental Research Center in Cincinnati, Ohio, and the Atlantic Ecology Division Laboratory in Narragansett, Rhode Island.

- *Sustainable Building Design*: The Kansas City Science and Technology Center in Kansas City, Kansas, and the New England Regional Laboratory in Chelmsford, Massachusetts, have achieved LEED™ Gold building certification standards; these two labs currently use less energy per gross square foot per year than any other new EPA laboratory.

- *Building Commissioning:* EPA is in the process of commissioning and retro-commissioning three large facilities in RTP, North Carolina, that account for nearly 45 percent of total Agency energy use. Once commissioning is complete, EPA is projecting energy savings of 10 to 20 percent.

- *Energy Savings Performance Contracts:* EPA continued work on its second energy savings performance contract (ESPC) during FY 2003 for the Kerr Environmental Research Center in Ada, Oklahoma, including a ground-source heat pump system for heating and cooling the facility, and a complete variable air volume system for air supply and fume hood air exhaust. The contract guarantees a greater than 50 percent reduction in energy consumption. EPA's first ESPC at its Ann Arbor, Michigan, laboratory was completed in April 2001.

- *Self-Generated/Off-Grid Renewable Energy*: EPA generated nearly 71,000 kWh of solar electricity and more than 13 billion Btus of renewable thermal energy in FY 2003 alone through a variety of onsite renewable energy technologies, including solar awnings, photovoltaic street lamps, a 100-kW photovoltaic roof, a solar wall, a ground-source heat pump system in Ada, Oklahoma, and a 200-kW natural gas fuel cell in Ann Arbor, Michigan. In FY 2003, EPA added a solar hot water heater to its Region 9 Headquarters Fitness and Child Care Facility in San Francisco.

CONCLUSION

EPA and its partners have developed a Green Power Purchase program that benefits the environment, expands the federal governments expertise in buying green power products, and helps make green power markets more robust.

Green Power Purchase Program Team

Norm Boyle	EPA HQ
Bucky Green	EPA HQ
Justin A. Spenillo	EPA HQ
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James White	EPA RTP, NC
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Judy Ray	GSA- Fort Worth
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Amy Hudson	GSA National Energy Center
Lindsey Lee	GSA National Energy Center
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Louis Lozito	GSA- New York
Brian Magden	GSA- New York
Larry Fratis	Defense Energy Support Center
Andrea Kincaid	Defense Energy Support Center
John Nelson	Defense Energy Support Center
Mike Cowan	Western Area Power Administration
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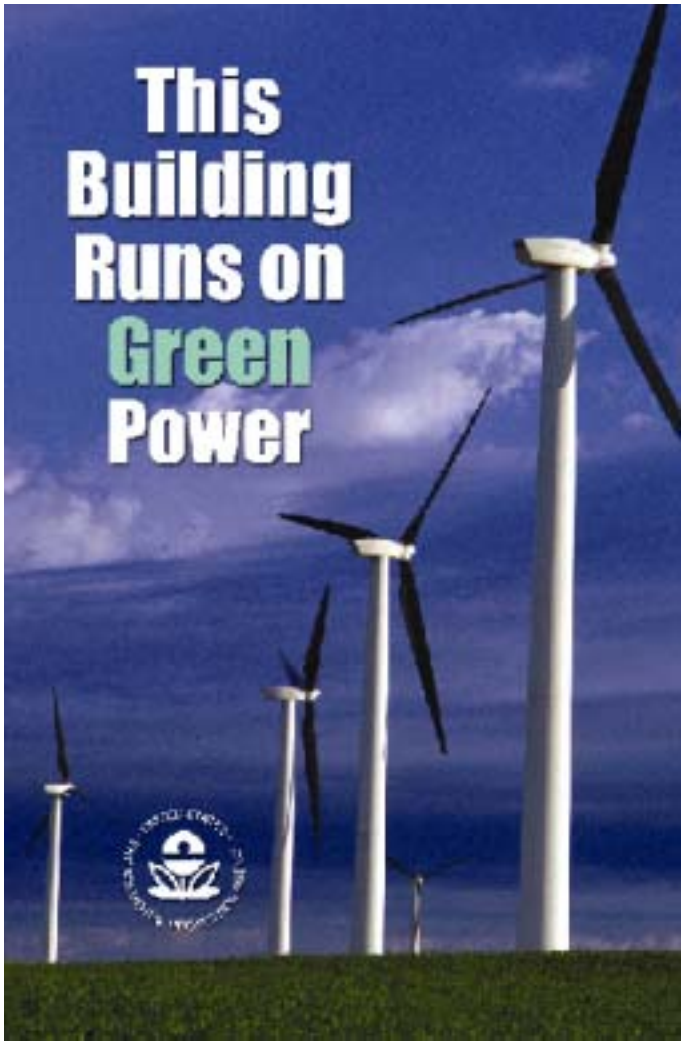
APPENDIX 1

EPA WINDOW CLINGS



2004 PRESIDENTIAL AWARDS
FOR LEADERSHIP IN FEDERAL ENERGY MANAGEMENT
COVER SHEET FOR AWARD NOMINATION

Please complete ALL sections. Nomination will be considered incomplete without this form.

TEAM OR PROJECT NAME: EPA'S GREEN POWER PURCHASE PROGRAM: PROGRESS THROUGH PARTNERSHIP

FEDERAL AGENCY: U.S. ENVIRONMENTAL PROTECTION AGENCY

NOMINEE INFORMATION (Please list name of one contact person to represent the nominated group.)

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The Federal agency energy coordinator will serve as the primary point of contact, and is typically an agency's designated representative to the FEMP Interagency Energy Management Task Force. This person should be able to coordinate and assist with agency nominations.

NOMINATOR INFORMATION

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Nominator Signature:

/s/ Jerry Oakley, Acting Deputy Director

_____

Total Energy Cost Saved in FY 2003 $ N/A (if applicable)

Total Btu Saved in FY 2003 N/A (if applicable)

Total electricity use for EPA reporting facilities in FY 2003.
125,829,394 kWh Or 429,329,892,300 Btus[1]

Total green power received by EPA in FY 2003[2]
25,000,000 kWh Or 85,300,000,000 Btus

Total annual green power under contract for delivery as of September 30, 2003[2]
111,000,000kWh or 378,732,000,000 Btu's

[1] Electricity use for EPA's 29 reporting facilities—which are all laboratories.
[2] Includes green power for offices and laboratories.

SUMMARY OF NOMINATION (no more than 200 words)

On separate sheet, please summarize your nomination, highlighting the significance of the achievement.

SEE ATTACHED.

SIGNATURE/APPROVAL OF SENIOR ENERGY OFFICIAL*

/s/ Sherry Kaschak, for

David J. O'Connor
Acting Assistant Administrator for Administration and Resources Management
U.S. Environmental Protection Agency

* Assistant Secretary-level official as designated under Executive Order 13123